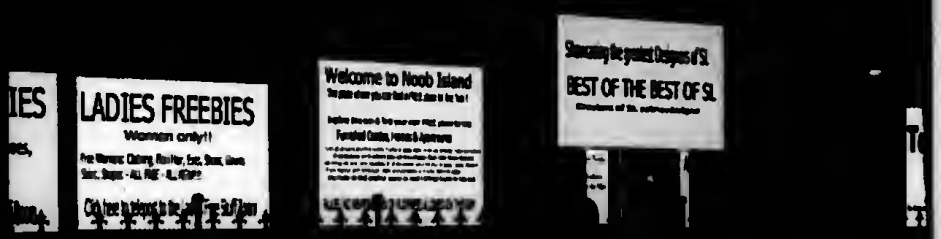
Long-ago drives with Dad inspire a new approach to improving IT project processes, with less fighting in the back seat.

COMPUTERWORLD

SECOND LIFE: IS THERE ANY THERE?

A week in the virtual world leaves our sojourner underwhelmed.



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DECEMBER 3, 2007
VOL. 41, NO. 49 $5/COPY

The Highly R

VOLUME I – ISSUE 5

Windows Server 2003

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SWISS SEES RELIABILITY SOAR WITH WINDOWS SERVER, CHECKS RED HAT AT GATE

Microsoft

eliable Times

www.microsoft.com/reliable

special edition

Global Airline's Migration Yields 99.95% Reliability

By MICHAEL BETTENDORF

ZURICH, Switzerland–Swiss International Air Lines (swiss), Switzerland's national airline, serves 70 destinations around the world with 6,500 employees in 105 branch offices. Today, 14% of swiss's total ticket sales are processed through its online flight booking system at Swiss.com, with volume increasing by 30% per year. 24x7 operations are critical for this site because of its importance to the airline's business, but the original Red Hat Linux–based booking system was not meeting swiss's requirements. So the airline began its search for a more reliable platform.

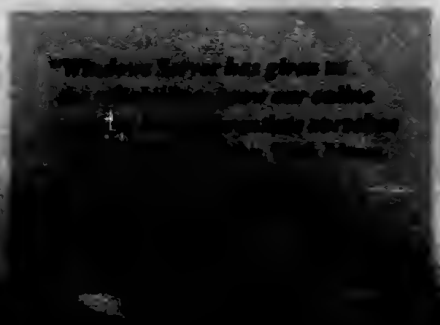
Reliability also drives market perception in the airline industry, according to swiss CIO Frank Meyer. "In our business, having a plane in the maintenance hangar is not good for our image. It is the same for our online service—people expect it to be up and running," says Meyer.

After an intensive evaluation, Meyer and his team chose Windows Server® 2003 and .NET. Since migrating the online booking system to Windows Server, swiss has seen reliability rise to 99.95%. In addition, while the previous Red Hat Linux–based system could only handle 250 concurrent users, the new system can now handle significantly more traffic than that. Meyer is confident about the effect of these changes: "Moving uptime to 99.95% while increasing performance to handle a greater number of users enables our team to easily handle the 30% growth we are seeing in our online sales."

For the full swiss story, [illegible] and independent [illegible]

STUDY: Side effects of reliability can include smiling, calmness

A study released today shows significant mood improvement in IT executives such as swiss's Frank Meyer (above) when they experience Windows Server reliability.



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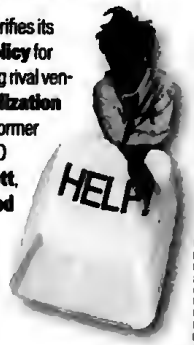

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Don Tennant

Just Plain Unethical

SEVERAL WEEKS AGO, I wrote about my encounter with Frank Abagnale, the famed former con artist whose life story was depicted in the book and movie *Catch Me If You Can* (see related Q&A, page 22). I noted that Abagnale blamed the failure of schools and universities to incorporate ethics into their curricula for the pervasiveness of illicit computer-related activity among young people.

That charge raised the hackles of professor emeritus David Rine, founding chair of computer sciences at George Mason University in Fairfax, Va., who stressed that the failure isn't a blanket one.

"I would like to point out to you that some of us have been working on this issue since the mid-1980s," Rine wrote in an e-mail. "We now have four computer- and IT-related undergraduate majors, [all of which] require a set of courses in the study of computer and IT ethics. . . . So we have been addressing this need now for over 20 years."

Rine explained that since ABET, the organization that accredits engineering and technology education, requires ethics coursework in computer and IT programs, George Mason has been working with other universities to promote the inclusion of ethics in IT curricula. "Sadly," Rine wrote, "not all computer and IT academic programs are pursuing ABET accreditation or requiring coursework in ethics."

That the demand for ABET accreditation of IT curricula isn't stronger is sad, indeed. According to a survey of undergraduate computer science faculty chairs by Carol Lee Spradling of the University of Nebraska this year, an impressive 87.6% of the 251 respondents said their programs include ethics. The problem is that less than half of those respondents — 48.2% — gave ABET accreditation as a reason for including it. The top reason was simply the institutional belief "that social and professional ethics should be incorporated into the undergraduate computer science curricula."

But just what constitutes incorporation of ethics into a computer science or IT program?

Michael Quinn, dean of the College of Science and Engineering at Seattle University, conducted a study on the teaching of computer ethics last year, when he was a faculty member at Oregon State University. Quinn surveyed 50 of the approximately 200 colleges and universities in the U.S. whose computer science programs are accredited by ABET, to determine how they meet its requirements.

■ That the demand for ABET accreditation of IT curricula isn't stronger is sad, indeed.

Quinn found that 55% of the surveyed departments require computer science majors to take an ethics course that's taught within the computer science department. Thirty percent said they incorporate discussions of ethical issues within other computer science courses. The remaining 15% said they require students to take an ethics course taught by another department, such as philosophy.

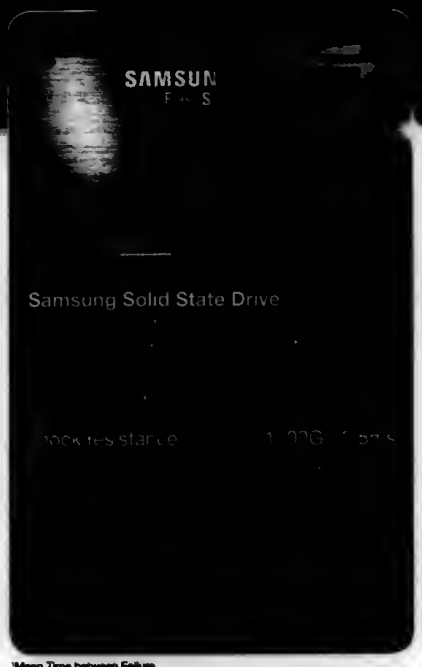
Quinn discovered that a number of respondents created their own computer ethics courses because they've found it to be too difficult to demonstrate ABET compliance otherwise. Trying to cover ethics within other courses is awkward, because "many computer science faculty members are reluctant to raise moral issues in the context of the computer science classes they are teaching." And leaving it to the philosophy professors doesn't work because "computer science students may never have the experience of seeing a computer science professor 'doing ethics,' " he says.

"When computer science faculty members teach ethics," Quinn sensibly asserts, "they serve as role models who demonstrate that contemplating the ethical dimensions of everyday decisions is something that everyone can and should do — not just those with a Ph.D. in philosophy."

Computer science departments need to follow the lead of fully ABET-accredited programs like the one at George Mason, where students are required to take both CS105 (Computer Ethics and Society) and CS306 (Synthesis of Ethics and Law for the Computing Professional). Otherwise, we're just teaching our students to pay lip service to ethics when they enter the IT workforce. And that's just plain unethical. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

his notebook may crash, but his drive won't.



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LETTERS

Don't Wait for College to Introduce Ethics

I agree that business ethics needs much more attention at the university level ["The Real Ethics Guru," Editor's Note, Oct. 22], and I was happy to hear the keynote speaker at my son's freshman invocation this fall at Bentley College talk mainly on that subject. But I was struck in reading Don Tennant's column that Frank Abagnale spoke solely about bringing ethics training back to colleges and universities. He, a convicted criminal, was a high school dropout. The remedy he proposes would not have prevented his own failure as a youth.

Colleges and universities should provide ethics training, but it should not be a student's first exposure to ethics principles. The impressionable years occur much earlier. Parents need to teach ethics early, and schools need to reinforce the instruction.

When my two sons were very young, I sought opportunities to teach them how to determine right from wrong. For example, one night, my family was leaving a restaurant, and we happened upon a wallet in the parking lot. My younger son picked it up and handed it to me. He asked, "What do we do with it?" My brother-in-law said, "Keep it; no one will know." I looked at my sons and said, "God would know," and I brought it into the restaurant and found the rightful owner.

Peter Goodermote,
automation manager, Mid-Island Electrical Sales, Commack, N.Y.

Some of us have been working on this issue since the mid-1980s. Back then, when I became founding chair of computer sciences at George Mason University, we established a sequence of required undergraduate coursework in computer and IT ethics. Students must not only study ethics, but also practice it as members of our academic community. With this approach, we have discovered that both learning and doing makes a difference both on campus and in later work.

We have been leading the way on this issue, and for a number of years, our undergraduate programs have been fully accredited by the Accreditation Board for Engineering and Technology.

David C. Rine,
professor emeritus, Olathe, Kan., DavidCRine@aol.com

News Digest

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THE WEEK AHEAD

MONDAY: A conference on the Extensible Business Reporting Language, or XBRL, starts in Vancouver, British Columbia.

TUESDAY: SAP holds its one-day "Influencer Summit" in Boston for the media, analysts and bloggers.

WEDNESDAY: A conference on active RFID begins in Dallas, with presentations by Ford, Boeing and other companies.

THURSDAY: Market research firm IDC releases its forecast of next year's key IT and telecommunications trends.

SOFTWARE

Microsoft Takes Steps to Prevent WGA Potholes

THREE MONTHS after a software upgrade snafu caused Microsoft Corp.'s Windows validation system to finger legitimate users as pirates, the company is detailing a series of steps it has taken to try to prevent a repeat of the problems.

In a blog posting, Alex Kochis, senior product manager for Microsoft's Windows Genuine Advantage software, outlined new processes that the WGA group has instituted.

"We've revamped the monitoring that is used to track what's happening within our server infrastructure so that we can identify potential problems faster — ideally before any customer gets impacted," Kochis wrote on Microsoft's MSDN Web site on Nov. 20.

He said the WGA team has also changed how it updates the back-end servers that host the antipiracy software.

Microsoft blamed WGA's 19-hour August meltdown on human error, saying that "preproduction code" had been installed on the live servers, which then began declining legitimate requests from Windows XP and Windows Vista users. A software rollback fixed the problem on the activation servers, but not on the servers that validate downloads and other postactivation transactions.

Since then, the company has conducted "more than a dozen 'fire drills' designed to improve our ability to respond to issues affecting customers," Kochis wrote. The drills, he added, have included both preannounced simulations and surprise alerts.

"The team is now better prepared overall to take the right action and take it quickly," Kochis promised.

Michael Cherry, an analyst at Directions on Microsoft in Kirkland, Wash., applauded Microsoft's willingness to acknowledge that its processes had failed during the August outage.

But Cherry lamented the apparent lack of any modifications to the WGA technology itself. He said that if legitimate users can't validate their copies of Windows because of a glitch in WGA, the software shouldn't label them as pirates.

"They should make it so that any impact is on Microsoft," Cherry said, "and not on the customer."

— Gregg Keizer

DBA Admits To Theft Of 8.5M Records

administrator at a subsidiary of Fidelity National Information Services Inc. last week admitted that he stole about 8.5 million customer records over five years. The records were sold to data brokers for $580,000, according to court documents.

William G. Sullivan pleaded guilty to felony fraud charges in a federal court in Tampa, Fla., and agreed to pay restitution to victims of the crime and cooperate with ongoing investigations into the theft.

His jail sentence has yet to be set, though the plea agreement calls for a term that is less than the maximum five-year sentence for the crime.

Sullivan was a database administrator at Certegy Check Services Inc., a Fidelity National subsidiary in St. Petersburg, Fla., that provides check authorization services to financial institutions and merchants.

The parent firm is a provider of transaction processing and related services to the financial industry. It is not affiliated with the better-known Fidelity Investments.

JAIKUMAR VIJAYAN

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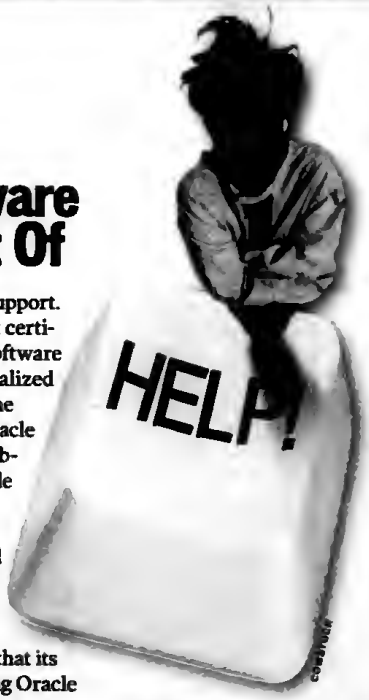
SOFTWARE

Oracle Clarifies VMware Support Plans – Sort Of



ORACLE CORP. is attempting to clarify its support plan for non-Oracle virtual servers to dispel confusion caused by conflicting statements from executives during its OpenWorld user conference in San Francisco last month.

After the Oracle VM virtual server was unveiled during the conference, CEO Larry Ellison said that the company would "essentially" continue providing support for Oracle software running on rival VMware Inc.'s virtual machines.

Ellison appeared to contradict earlier comments by Ed Screven, chief corporate development architect at Oracle, who said that the vendor would not offer support for such systems.

In an e-mailed response to *Computerworld*, Oracle contended that there is "no change" in its support policy for customers running Oracle applications on VMware. The statement asserted that such users have never been guaranteed full support.

"Oracle has not certified any Oracle software on VMware virtualized environments," the company said. Oracle said it will fix problems in non-Oracle virtualized environments only if they are unrelated to the virtualization platform.

VMware contended last week that its customers running Oracle software needn't worry about the database vendor's support policy. "Oracle has been responsive [to] and supportive of customers who are running Oracle products in VMware environments," said Parag Patel, vice president for alliances at VMware, in an e-mail to *Computerworld* last week.

"We haven't seen many referrals from Oracle (even though Oracle's official policy mentions sending referrals to VMware), which seems to indicate that Oracle is engaging with our mutual customers," Patel wrote.

Gordon Haff, an analyst at Illuminata Inc., noted that Oracle tends to work with its customers despite such support policies.

"Like Microsoft, Oracle doesn't especially like to play in other children's sandboxes, but in practice, it does what it has to for important customers — even if it does so reluctantly," he said. "This isn't exactly nice behavior. But it's hard to argue that it's hurt them to any significant degree."

— Eric Lai

Short Takes

[illegible]

CAREERS

Fired Microsoft CIO Lands New Job at Mortage Lender

Former Microsoft Corp. CIO Stuart Scott, who was fired by the software vendor early last month for violating unspecified company policies, has landed a new job – with a higher-level title – at a mortgage firm.

Scott started work last Monday as chief operating officer at Taylor, Bean & Whitaker Mortgage Corp., a privately held wholesale lender in Ocala, Fla. His hiring was announced Nov. 21, just over two weeks after a Microsoft internal memo said that he had been terminated.

According to TB&W, the firm is one of the top 10 wholesale mortgage lenders in the U.S., servicing a portfolio with a total value of about $50 billion.

Scott will continue to reside in Bellevue, Wash., according to TB&W. The lender said in its press release that Scott's "vast technology experience" at Microsoft and General Electric Co. "made him an obvious choice" for the COO position. But it didn't specify what Scott's duties will be.

Scott is now COO at Taylor, Bean & Whitaker.

Repeated attempts to leave voice-mail messages seeking additional information from TB&W executives were unsuccessful. And a receptionist who answered the phone at the company's offices said that it doesn't have a public relations contact.

Scott worked at Microsoft for more than two years; he was initially hired as co-CIO and was given full control of the company's IT department late last year.

– ERIC LAI

GOVERNMENT

Fed CIO Says She Asked Agencies to Hold Off on Smart ID Card Rollouts

In an interview last week, **Karen Evans**, *administrator of e-government and IT at the White House Office of Management and Budget, explained why many federal agencies didn't meet an Oct. 27 deadline for issuing smart ID cards to all employees with less than 15 years of experience: She told them not to. Excerpts from the interview follow:*

"We specifically said to agencies, 'Look, focus your efforts on other activities, because what we don't want you to do is issue [smart ID cards] that will not be interoperable.'
KAREN EVANS, DE FACTO FEDERAL CIO

Are you satisfied with the progress being reported by agencies on meeting the president's smart ID card mandate, considering that a lot of them appear to have missed the Oct. 27 deadline? The piece that we asked agencies to hold back on was the actual credentials themselves. We wanted to make sure that once you got a card issued, it would be truly interoperable. One of the problems we had was that there were technical challenges with the [ID] certificate itself.

Agencies could have made the goal, but you don't want to have everyone run out and be compliant, and then have everyone turn around and have to reissue all the cards. So when you ask me if I'm satisfied with the progress of the agencies, the answer is yes, because now I expect to see a dramatic increase in the number of cards when we issue [a status] report in December.

What do you plan to include in that report? Prior to this, all of the agencies were releasing status reports on their own Web sites. What the OMB is going to do is release a cumulative report that is very transparent about where we are and that tracks our progress across the government as a whole. Everybody will be able to see exactly how many credentials have been issued.

— Jaikumar Vijayan

BETWEEN THE LINES *By John Klossner*

[redacted]

in the U.S. set a one-day spending record on Cyber Monday, making $733 million worth of purchases, according to comScore Inc., which tracks Web user behavior.

released its first service pack for Exchange Server 2007. It said SP1 fixes [illegible] and adds features designed to make the software more stable.

Top executives at Fujitsu Ltd. took pay cuts following a computer failure at the Tokyo Stock Exchange, mirroring punishments dished out earlier to exchange officials.

Global Dispatches

U.K. to Review Planned Database

LONDON – Ed Balls, U.K. secretary of state for children, schools and families, last week ordered an independent assessment of security for the government's planned ContactPoint database.

The £224 million ($462 million U.S.) database will store the addresses, contact information and other data on every U.K. child from birth until age 18.

The order from Balls came in the wake of last month's disclosure that two CDs containing personal data of 25 million people was lost in transit between the country's HM Revenue & Customs facility and the National Audit Office.

The security review will delay implementation of the ContactPoint database by at least five months.
Tash Shifrin,
Computerworld U.K.

EU Still Probing IBM-Telologic Deal

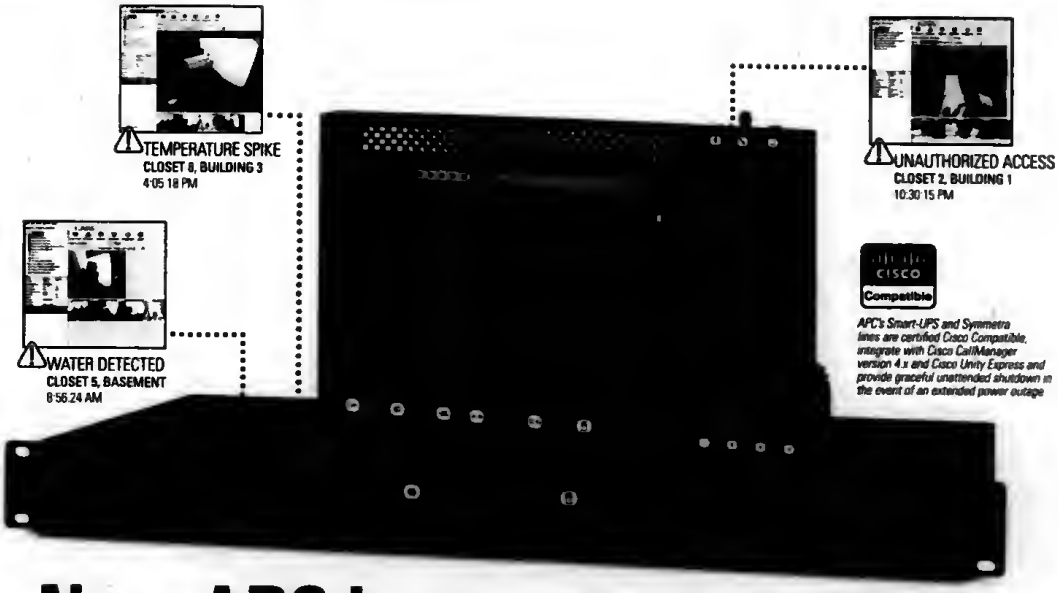
BRUSSELS – European Commission competition regulators have asked IBM and Telologic AB for more information as they continue their probe into IBM's plan to buy the Malmö, Sweden-based maker of software development tools.

The investigation was first scheduled to be completed by Feb. 20, 2008, but that deadline will be extended so the new information can be studied, said a commission official.

The EC began its investigation into the proposed $745 million (U.S.) deal, announced in June, because of fears that it would reduce competition among makers of software modeling and development tools.
Paul Meller,
IDG News Service

BRIEFLY NOTED

Lenovo Group Ltd. has announced plans to build a $20 million (U.S.) factory in Legnica, Poland, to manufacture PCs to sell in Europe and Africa. Lenovo said that it expects to begin production at the plant, which will employ 1,000 workers, late next year.
Sumner Lemon,
IDG News Service



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Supercomputers Bulk Up on Power While Shedding Price Pounds

ROBERT NEUBECKER

High-performance systems are getting larger and larger. But lower costs are broadening their appeal within IT. By Patrick Thibodeau

RENO, NEVADA

THE trade show floor at the SC07 supercomputing conference here last month had a futuristic, film noir feel, with low lights, large glowing screens and scattered towers that displayed the names of companies and national laboratories. It was a landscape that evoked the movie *Blade Runner*, and the exotic was the norm.

For instance, in one location, Hewlett-Packard Co. was demonstrating a small "supercomputer in a box" that can be rolled around on wheels. Around the corner, there were widescreen monitors displaying cubist-like biology simulations.

But supercomputing's future also includes the not-so-exotic: much more raw power — and reduced prices that are helping to broaden the use of high-performance computing (HPC) technology in business applications.

HPC systems are in the midst of a huge leap in size and performance, thanks to multicore processors. In November 2003, when single-core chips still dominated the market, there was a total of about 267,000 processing units in the systems that made the biannual Top500 list of the world's most powerful supercomputers.

Two years later, the number of processor cores in the Top500 systems had jumped to 732,500. And when the academic researchers who compile the list released the latest version at SC07, the number of cores had reached 1,648,095.

HPC systems are growing larger so quickly that more than one quarter of all the server processors being shipped by hardware vendors are now going out the loading-dock door in supercomputers, according to market research firm IDC.

In 2004, about 1.65 million server processors — 16% of that year's total — were shipped in HPC systems, IDC said. Last year, it said, 3.35 million chips went into supercomputers, accounting for 26% of the processors shipped. That percentage will increase to nearly 30% this year, IDC predicts.

But while many HPC systems have tens of thousands of processor cores, the availability of more-affordable low-end systems is what's attracting the attention of companies like Ping Inc.

Three years ago, Phoenix-based Ping began using a $100,000 Cray XD1 supercomputer to help in designing the golf clubs it makes. The XD1 cut the average processing time of design simulations from the 13 hours or so that they were taking on workstations to 20 minutes, said Eric Morales,

Continued on page 16

Continued from page 14
a staff engineer at Ping.

But at SC07, Morales saw $20,000 systems that offer processing power equal to what his Cray machine can deliver. He said that he wants to take advantage of such systems to expand HPC technology into Ping's manufacturing processes.

"I think we've done as much as we can [on HPC systems] with what we have, but I feel that we need to expand," Morales said. "There's more that we can do."

Nine years ago, the most powerful supercomputer in the world was the ASCI Red system, built by Intel Corp. and installed at Sandia National Laboratories in Albuquerque. That system included 9,152 Pentium processors, took up 2,500 square feet of space and cost $55 million. On benchmark tests, it reached a performance level of 1.3 trillion floating-point operations per second, or teraflops.

> **"I think we've done as much as we can [on HPC systems] with what we have, but I feel that we need to expand. There's more that we can do.**
> **ERIC MORALES,** STAFF ENGINEER, PING INC.

Now you can get nearly 1 teraflop of throughput from the supercomputer-in-a-box system that HP announced at SC07. The machine, a version of HP's Blade System c3000 designed for midsize users, includes eight server blades, each with two of Intel's new Xeon 5400 quad-core chips.

HP said the system takes up just two square feet of space, can run off a standard wall socket and doesn't need to be located in a data center. Typically, it will cost between $25,000 and $50,000.

Thanks to such systems, IDC forecasts that worldwide HPC revenues will rise from about $11 billion this year to more than $15 billion in 2011 — an average annual growth rate of 9%.

But in some respects, the HPC market is still focused more on scientific researchers than it is on users like John Picklo, HPC manager at automaker Chrysler LLC.

Picklo, who oversees clustered Linux and Unix systems with a total of 1,650 processor cores, said that the vendors of HPC applications aren't keeping up with the shift to multicore chips. According to Picklo, many software vendors still base their pricing on the number of processor cores in a system. The problem, he said, is that quad-core processors don't necessarily deliver performance equal to that of four single-core chips.

"If I was buying four single cores, I wouldn't mind buying four licenses," Picklo said. "But if a quad-core [processor] requires four licenses, I'm not going to get the same benefit out of that."

He added that he wants application vendors to consider alternative licensing models, such as ones based on processor performance.

Software licensing isn't as big of an issue for academic and government researchers, who typically run custom application code. For those users, vendors are packing quad-core chips into HPC systems in increasingly dense configurations. For instance, there are just under 213,000 processor cores in the BlueGene/L system that IBM built for the U.S. Department of Energy's National Nuclear Security Administration.

The BlueGene/L, at Lawrence Livermore National Laboratory in Livermore, Calif., has been No. 1 on the Top500 list since November 2004. Following an upgrade earlier this year, its sustained benchmark throughput is 478.2 teraflops.

But IBM vows that next year, it will build multiple systems that can reach the petaflops level — more than twice what is possible now. "You'll probably see several petaflop machines," said Leo Suarez, IBM's vice president of deep computing.

The growth rates are such that by 2015, all of the Top500 systems will at least be in the petaflops category, predicted Erich Strohmaier, a researcher at Lawrence Berkeley National Laboratory who helps compile the supercomputer list. ■

Microsoft Puts Weight Behind Development of Parallel Apps

High-performance computing is dominated by Linux and Unix, which together account for more than 90% of the HPC market, based on the number of processors installed in systems, according to IDC.

But supercomputing is increasingly getting the attention of Microsoft Corp. At the SC07 conference, the software vendor said it is creating a common set of development tools for building parallel applications that can run on desktop and clustered systems with multicore processors.

Like other major vendors, Microsoft thinks that HPC is becoming an integral part of business IT, as companies turn to the technology to design and test products in virtual environments and to analyze the vast amounts of data they collect.

As the use of multicore chips in supercomputers increases, the need for applications that are designed to run in parallel across different processor cores is growing as well. "Parallelism has gone mainstream," said Kyril Faenov, general manager of HPC at Microsoft.

As part of its new Parallel Computing Initiative, Microsoft is adding extensions to its .Net Framework to enable developers to build parallel applications more quickly. Preview versions of the extensions should become available over the next six months, Faenov said.

Microsoft also released the first public beta of Windows HPC Server 2008, an update of its operating system for clusters that is slated for commercial shipment late next year.

Purushotham Bangalore, an assistant professor in the School of Natural Sciences and Mathematics at the University of Alabama at Birmingham, said that Microsoft is "just catching up" to other vendors on HPC technology.

But Bangalore, who teaches classes on parallel programming, didn't discount Microsoft's ability to influence HPC developers. "They have a way of redefining the world," he said.

– PATRICK THIBODEAU

Pandemic Threat Still Getting IT's Attention

Public interest in the avian flu has diminished. But some IT managers are continuing to prepare for an outbreak.

By Patrick Thibodeau

THE ASSOCIATED PRESS

Travelers arriving at Manila's Ninoy Aquino International Airport are greeted by a sign informing them of the Philippine government's continuing bird flu watch.

THE AVIAN FLU is following a plot line that could have come out of a Stephen King novel. It's a menacing presence but remains mysterious, striking in out-of-the-way places while threatening havoc via a global pandemic. And until this year, the flu was a best-seller with the media, spurring employers to plan for a possible outbreak.

Coverage of the bird flu threat has fallen off, along with some of the drive to prepare for a pandemic. The U.S. Government Accountability Office said in a report released in October that many organizations face a challenge in "maintaining a focus on pandemic planning due to the uncertainty of when a pandemic may occur" and the need to address more immediate issues.

"There's been a bit of what we call pandemic fatigue," said Dr. Myles Druckman, vice president of medical services at International SOS, a company with dual headquarters in Singapore and London that provides health and security services to multinational businesses.

Despite the drop in public interest, several IT managers said at Gartner Inc.'s annual data center conference in Las Vegas last week that they are continuing to prepare for a potential pandemic.

Richard Siedzik, director of computer and telecommunications services at Bryant University in Smithfield, R.I., said that school officials hold bimonthly pandemic planning meetings. The major IT issue, he added, is ensuring that operations won't shut down completely if the university is forced to suspend classes and close its offices.

That primarily means making sure that various systems at Bryant have enough remote access capacity to support employees working from home, he said.

Bryant is also preparing for the possibility that some students won't be able to return home during a pandemic because of quarantines in their communities. "We have to make arrangements to sustain students on our campus," Siedzik said.

Chuck Conway, IT operations manager at an energy company that he asked not be identified, said preparing for a pandemic has become part of his employer's overall business continuity planning process. IT officials have evaluated systems' ability to support remote workers and have developed contingency scenarios in case a pandemic strikes, he said.

Renewed media attention to the possibility of a pandemic might help loosen corporate purse strings and enable the IT department to further boost remote access support, he added. But for now, Conway said, "we can live with what we have."

Thus far, avian influenza has killed just over 200 people worldwide, with about half of the deaths occurring in Indonesia. But public health officials and medical researchers are concerned that the bird flu virus may eventually he easily spread from person to person, a development that could touch off a global outbreak.

If that were to happen, quarantines and restrictions on travel could force large numbers of employees to work from home. Meanwhile, IT staffers might he asked to take on added responsibilities or even to temporarily live at corporate offices.

Bob Kallas, a director of computer support services at a company that he didn't want to he named, said his firm recently conducted a real-world test to see how many remote workers it could support. Company officials told several hundred employees to work from home one day.

"We wanted to measure our readiness to be able to support the company," Kallas said. The test showed, he added, that there is enough capacity to meet his employer's needs. ■

In IT, the wrong metrics could be

worse than no metrics at all.

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On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Share Excel Files SaaS Style

TO SAY, as George Langan does, that "companies run on Excel" is only a slight exaggeration. But working with Excel is generally a solitary process. If people want to share their work, they send e-mail attachments, which is not a particularly secure practice. Langan, who's the CEO of eXpresso Corp. in Menlo Park, Calif., wants to make working on Excel spreadsheets a secure and auditable collaborative process. Later this month, the company plans to take its eXpresso software-as-a-service offering out of beta and begin charging $80 per year per seat for the Professional version. (The company is also releasing Open eXpresso, a free, feature-reduced version, and it says an enterprise appliance is slated for Q1 2008.) Also, eXpresso has created a clever way to share spreadsheets online. According to Langan, when an Excel file is uploaded to the eXpresso site, the service turns it into a binary large object, or BLOB, which can then be broken into the columns and rows of a relational database. Although everyone continues to work in Excel, changes are made in the database. Multiple people can work on the same spreadsheet in real time, says Langan. You can set a "safe point" in the service so you can always roll back to a known good file. The system can grant users various levels of access to a document, determining who can, say, read it, revise it or print it. During the collaboration process, instant messages are saved in a searchable data store. Sure beats sending Excel files here, there and everywhere.

150M
Business users of Excel worldwide, per Microsoft.

Autonomic For the People

Most vendors target their autonomic management tools at the IT operations staff. That's a mistake, contends Bruce Olson, vice president of strategy and business development at Optinuity Inc. in Bethesda, Md. He says the best place to monitor for autonomic purposes is at the application level, which is what your users care about anyway, not metrics about packet retransmission rates. Today, Optinuity is announcing its Oasis tool, which helps app dev teams build in autonomic support for their software. The Oasis visual user interface lets developers "create complex effects that are not complex to write," says Chief Technology Officer Rachid Sijelmassi. These effects are what Olson calls an "action plan" about, say, how to alert a SAN administrator that an application needs more storage. He adds that having the app writers create the metrics is likely to result in fewer alerts. Pricing varies by implementation.

OLSON: Application autonomics belong with the developer.

'Rip' a Searchable Index From Backup

A 2005 survey by Fulbright & Jaworski LLP estimated that the average $1 billion company had 140 lawsuits pending against it. And with the advent last year of new electronic-discovery regulations, your company's legal team has probably already asked you for some help in finding old e-mails, files and the like. In fact, Jim McGann, vice president of marketing at Index Engines Inc., a vendor of discovery tools in Holmdel, N.J., claims that some firms are "getting litigation-ready" by locating and categorizing files in anticipation of courtroom action. In other words, e-discovery has become another pressure point on IT. Index Engines eDiscovery Appliance v2.5, available now, can help, says McGann, noting that it can index one of your more difficult data repositories — tape backup. He says Index Engines can decipher five different backup software formats and "rip" an index of everything stored. Pricing starts at $50,000. ■

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Portion of U.S. firms with at least 25 lawsuits pending against them last year, says Fulbright & Jaworski LLP.

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■ THE GRILL

Frank Abagnale

The **con man turned crime fighter** talks about **stupid laws, naive companies** and the **lure of easy money.**

Dossier

Name: Frank W. Abagnale

Title: President, Abagnale & Associates Inc.

Location: Washington

Favorite nonwork pastime: "I spend my time with my wife on our boat on Grand Lake in Oklahoma."

Role model: "My dad. He was a very loving father, and I admired him for the type of person he was."

Favorite vacation spot: "I travel four days a week, so my vacation is to be at home where I can work in the yard and wash my car."

Regrets? "Obviously, I wish I hadn't lived the life I started out living, and I wish I could live that over. But I can't do that."

Frank W. Abagnale, former imposter and fraudster, and subject of the book and movie Catch Me If You Can, *was ultimately apprehended by police and served five years in prison. He was then released on the condition that he would assist federal law enforcement agencies, which he has done for more than 30 years.*

Suppose you'd been born in 1990. How much of what you got away with 40 years ago do you think you'd be able to get away with as a 17-year-old today? It would be 4,000 times easier to do today what I did 40 years ago, and I probably wouldn't go to prison for it. Technology breeds crime; it always has, it always will.

When I forged checks 40 years ago, it required a $1 million printing press that required three journeymen printers to operate. Today, I sit down at a laptop, pick any company I want, go to their Web site, capture their logo, like American Airlines. I put it up on a check with a 747 in the background taking off. Fifteen minutes later, I have the most beautiful American Airlines check you've ever seen — probably 10 times better than the check American Airlines uses.

Continued on page 24

WHEN INFORMATION AVAILABILITY MATTERS

Technology breeds crime; it always has, it always will.

Continued from page 22

Forty years ago, I wouldn't know who signs American's checks; I wouldn't know where American Airlines keeps its accounts-payable account. Today, I would just call their accounts receivable, ask them for their wiring instructions. They'd tell me where they bank, what their account number is. I call back and ask for a copy of their annual report, and on page three will be the signature of their chairman of the board, the CEO, the CFO, the treasurer. I scan it onto glossy white paper, with camera-ready art, and I have the check. A world of too much information and the technology make it very easy to do today what I did 40 years ago.

Is there anything we can do to make illicit computer-related activity a less attractive pursuit for young people? I really think the more technology there is in the world, the more you have to instill character and ethics. You can build all the security systems in the world, and all it takes is one weak link — someone who operates that technology — to bring it all down. That's where the problem lies. Until that changes, crime is always going to be with us.

Any thoughts on how we can bring that change about? I think you need to bring character and ethics back into schools. Only about half of Fortune 500 companies even have a code of ethics or code of conduct. The ones that do have one publish it every five years on an inside page of their annual report to appease their shareholders. Rutgers just finished a five-year study that found that 56% of MBA students cheated.

How would you rate the effectiveness of international cooperation in the fight against computer crime? It's getting a little better, but you're dealing with a lot of countries like China, Nigeria, Libya, Russia, where we really don't have that cooperation. Unless it's a huge dollar amount or some international incident, it's very difficult to get the authorities to do anything.

How are we doing domestically? We have a lot of stupid laws. There's Check 21 [the Check Clearing for the 21st Century Act, which requires banks to accept paper documents with check images in place of original paper checks] — the whole concept is ridiculous. You give me a check for $2,500. I take the check and alter it to $25,000; I go to my bank and deposit it. My bank takes an image of it, which is a 600-dpi black-and-white copier image. It transmits that to your bank; they pay it, then they physically destroy the check. A month later, you reconcile and your auditor goes, "You wrote Abagnale a check for $2,500; obviously Abagnale has altered the check." So you sign an affidavit to your bank saying the physical check has been altered. Under Check 21, they have to go back to the first bank of deposit, which is my bank. They tell my bank, "You have to give us some money back, this is a forged check." Then, of course, the bank calls me and they say, "*Computerworld* said they gave you a check for $2,500 and you altered it to $25,000." I say, "They did? Do you have the check? No? Talk to you later." There is no evidence; it's just absurd.

There are a lot of stupid laws passed every day. I always say criminals must have lobbyists in Washington.

What's the single biggest oversight companies make with respect to computer security? First of all, there is no foolproof system. My experience is if there's a man or woman who designed it, there's a man or woman who can defeat it. I think most companies fail to look at the person who's operating the system, the person who has information about the system — his background and how much that person can be trusted. Companies hire people today with very little background-checking; they're put into positions, or they earn their way up to positions, where they can do something to harm or cheat that company. So we have to pay a lot more attention to that weak link — the human part of the system.

If I'm trying to get inside a company, I'm going to find out who works in that weak-link position. I'm going to say, "I don't know what they pay you, but I will triple or quintuple what they pay you if would simply get this information for me."

I'm not saying to steal something physical. I'm saying to somebody, "Pull this up on the screen, write it down, and I'll give you $50,000. Nobody's going to know you did it. You'll never see me or hear from me again."

What's the biggest misconception people have about you and your background? All people know about me is the movie and what I did; I don't think they know that I've spent 32 years with the FBI and that I've dedicated my life to doing these kinds of [law-enforcement] things.

— *Interview by* **Don Tennant**

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■ OPINION

Thornton A. May

The IT Ambulance Is on the Way

TECHNOLOGY IS amazing. You know this, of course — it's probably why you're in the IT industry. But you might not know the latest accomplishment racked up by the multimedia blizzard of the early 21st century: We have succeeded in making the day longer than 24 hours.

At least many of us now report that we do more in a day than can be done in just 24 hours. A recent U.S. study found that, on average, respondents engaged in more than 43 hours of daily activities. This bit of legerdemain is accomplished with the aid of technology.

It's what allowed respondents to say, as an example, that in a typical day, they spent four hours watching television, three listening to MP3 tracks, five e-mailing, one and a half cooking, four eating, two text messaging, two reading, one and a half exercising, four socializing, three driving, two Web surfing, one grooming, six child-rearing and seven sleeping.

For most people, the biggest block of time is still devoted to sleeping, the one thing that doesn't lend itself to multitasking. And whether it accounts for eight hours or six or nine, many feel that this amount of time is wasted.

With so much to do in a day, something has to give. So a lot of multitaskers, enabled by enhanced connectivity, are working late into the night. Others, bombarded by electronic stimuli throughout the day, are simply too wired to sleep. But sleep deprivation takes a toll on the body, and those who chronically start their day already fatigued are more susceptible to a variety of ailments.

■ The 43-hour day may not be sustainable, and the consumerization of IT may have reached its limits.

The Laws of More (Moore's, on computing power; Nielsen's, on bandwidth) continue to make technology smaller, more powerful, more ubiquitous, easier to use and cheaper to buy.

But human beings are rapidly approaching the satiation point when it comes to how much time they can devote to using all this technology. The 43-hour day may not be sustainable. And the consumerization of IT may have reached its limits. When I put these two trends together, I see a new driver for IT on the horizon: health enhancement.

Consumers, who have been driving technology adoption and expectations both inside companies and out, may start to turn away from technology that increases personal productivity or entertains and instead spend significantly on technology that enhances their health.

Already, consumers made ragged by their constant use of technology have turned sleep into a $20 billion industry that includes everything from drugs such as Lunesta to high-tech mattresses like the Sleep Number Bed.

Also positioned for big growth are health sensors, personal health record services, and other, more esoteric applications. For as little as $1,000 and a saliva sample, for example, human genome services you might have thought were the province of the Sci-Fi Channel are being provided to consumers. An entire new industry is set to spring up around offering individuals unprecedented access to their own DNA.

This is just the beginning. Every software vendor with a pulse is putting its health care vertical strategies together. ■

Thornton A. May *is a longtime industry observer, management consultant and commentator. You can contact him at thorntonamay@aol.com.*

IS THERE ANY THERE THERE

After a week's sojourn, our virtual traveler isn't so sure.

BY GARY ANTHES

COVER STORY

UNTIL RECENTLY, I thought "second life" referred to one of those places the Bible says we'll go after we depart this life.

Now I know it's a virtual place, a vast collection of electrons on computers all over the world and, more to the point, a state of mind and a place for adventure, romance, business and just plain fun for millions of users.

My editor made me do it. I never would have given Second Life (SL) a second look had she not asked me to write a story about it. I considered myself too old and too serious to dive into something I imagined was designed for twentysomethings looking for virtual sex.

I had two fears. One was that in SL I would be persuaded to reveal — maybe even invent — secrets about myself that would horrify my neighbors, jeopardize my marriage and cost me my job. My second fear was that I'd get utterly consumed by the experience. I'm already at the ragged edge of addiction to e-mail and ordinary Web surfing, and I didn't want to find myself up at 3 a.m. navigating an avatar through cyberspace.

So I posed that time-worn question to my editor: Where's the corporate IT angle in this? Wouldn't she rather I wrote a story on "How to Replace Windows with Linux on 1,000 Servers Without Breaking a Sweat," or "The Top 10 Ways to Sort a VSAM File?"

But Bill Gates and others have appeared at respectable IT conferences via Second Life, and Hewlett-Packard has conducted job interviews in its virtual offices, so there must be something there, my editor said. Just do it, and we'll figure out the angles later.

MONDAY: SQUARE 1

So I did it. I started with some background reading. There is virtual sex in SL, I learned, but that's not the main point for most users. And I was shocked to learn that you can — and many people do — spend real money in SL.

When I visited *www.secondlife.com*, the type was so small I couldn't read it without enlarging it two times in Firefox. So it *was* designed for twentysomethings, after all!

I signed up and downloaded the client software. I declined to use my nonvirtual credit card to buy SL's virtual currency, called Linden dollars (after SL's creator, Linden Research Inc.), and I declined to buy a headset and mike, which is what you need if you want to talk to your fellow residents rather than type to them.

I was presented with a longish list of last names from which to choose. You can then pick any first name, so I became Icon Silverspar. I was assigned a plain vanilla avatar, based on gender; apparently nearly everyone but me chooses to personalize theirs immediately.

Newbies are required to start out doing four simple tutorial exercises in a place called Orientation Island. Well, three were simple and one was impossible. I finally had to call a colleague for assistance, which I hated to do. I spent a lot of time stuck on this beginning step, and it was quite frustrating, a little like trying to get Microsoft Word to stop doing those annoying autoformatting things.

But even at this beginning stage, I had my first emotional experience in the virtual world. The pretty young female Asian avatar of a woman who said she was Chinese stopped to say hello. We exchanged a few pleasantries until my (real) telephone rang. When I returned to my PC five minutes later, she had shouted, in apparent frustration, "PLEASE TALK TO ME!" I apologized, and I meant it, but by then she had walked away. I had inadvertently dissed this nice woman — or at least I think she was a woman — and I felt bad about it.

But it was a good reminder of something that I guess I knew but had not really thought about: Behind the two-dimensional avatars on my screen were real human beings.

TUESDAY: SQUARE 1.01

My colleague couldn't help me with the tutorial. "Second Life's user interface sucks sometimes," he explained, not to my surprise, and he advised me to just move on. I decided

to quit trying so hard to learn how to do everything and just chat with the people I met. Maybe they could teach me things.

I moved rather easily from Orientation Island to Help Island, where I found no help and from which I could not escape. I ran into a fellow newbie there and asked her if she knew how I could get to a more interesting place, like a big city. She said she had read somewhere that newbies had to wait for "greeters" to take them off the island. She was waiting for a greeter and said I was welcome to wait with her.

We waited, but nothing happened. I logged off and immediately ordered *A Beginner's Guide to Second Life* from Amazon.com, paying extra for one-day shipping.

WEDNESDAY: DAWN

Advice to readers (my editor always looks for "actionable advice" in a *Computerworld* story): Buy a book on SL, or get some tutoring from an experienced user.

With the help of the book and sheer persistence, I painfully — but, it must be said, with some fun — guided my avatar down the learning curve. I discovered how to get from place to place (yes, you can fly in SL), how to change my appearance (most residents of SL, both men and women, are young and gorgeous), how to search for things, how to read maps and so on.

But now that I had mastered the basics and had overcome much of my initial frustration, some important questions moved from the back burner to the stove front: Just why was I there, and what would I do there? What were my definitions of "success" or "happiness" in SL, and how would I find them?

Knowing that my editor would ask about practical IT applications, I sought out a virtual island owned

Continued on page 34

WORLD, STUFF

CISCO SYSTEMS has been staging virtual meetings between developers and channel partners in Second Life for more than a year, but this invitation was a first for me. So a presentation announcing the winners of a networking technology innovation contest – inside a Second Life simulation – seemed like the place to be.

I am probably an SL noob (for newbie) by most standards, but I have spent enough time there to know most of the ways to move and how to search out islands and events.

I arrived early and tried on a new VoIP stereo headset so that I could talk in voice to a Cisco spokesman, but I got it to work only after trying several times and realizing that I was talking loud enough to interrupt others nearby.

The attendees included a number of apparent journalists, contest finalists and Cisco employees, most with avatars dressed in business casual. One came as an alligator, though.

The hourlong presentation was interesting. Attendees flew in and out; there was trouble launching a catchy, hip video. Many in the audience apparently didn't realize that the SL text-chat function allows a user to chat with just one person or with everybody at once. As a result, there were frequent interruptions of text cheers for the winners as well as all kinds of random comments.

The presenter, ThomasB (a Cisco senior manager whose Real Life, or RL, name is Thomas Barnett), eschewed audio and instead texted the names of the finalists and the grand prize winner, Amir.

Amir, whose avatar came to the stage, had proposed the idea of a Personal Digital Butler that would integrate all the devices in his home using a Cisco router and a command center.

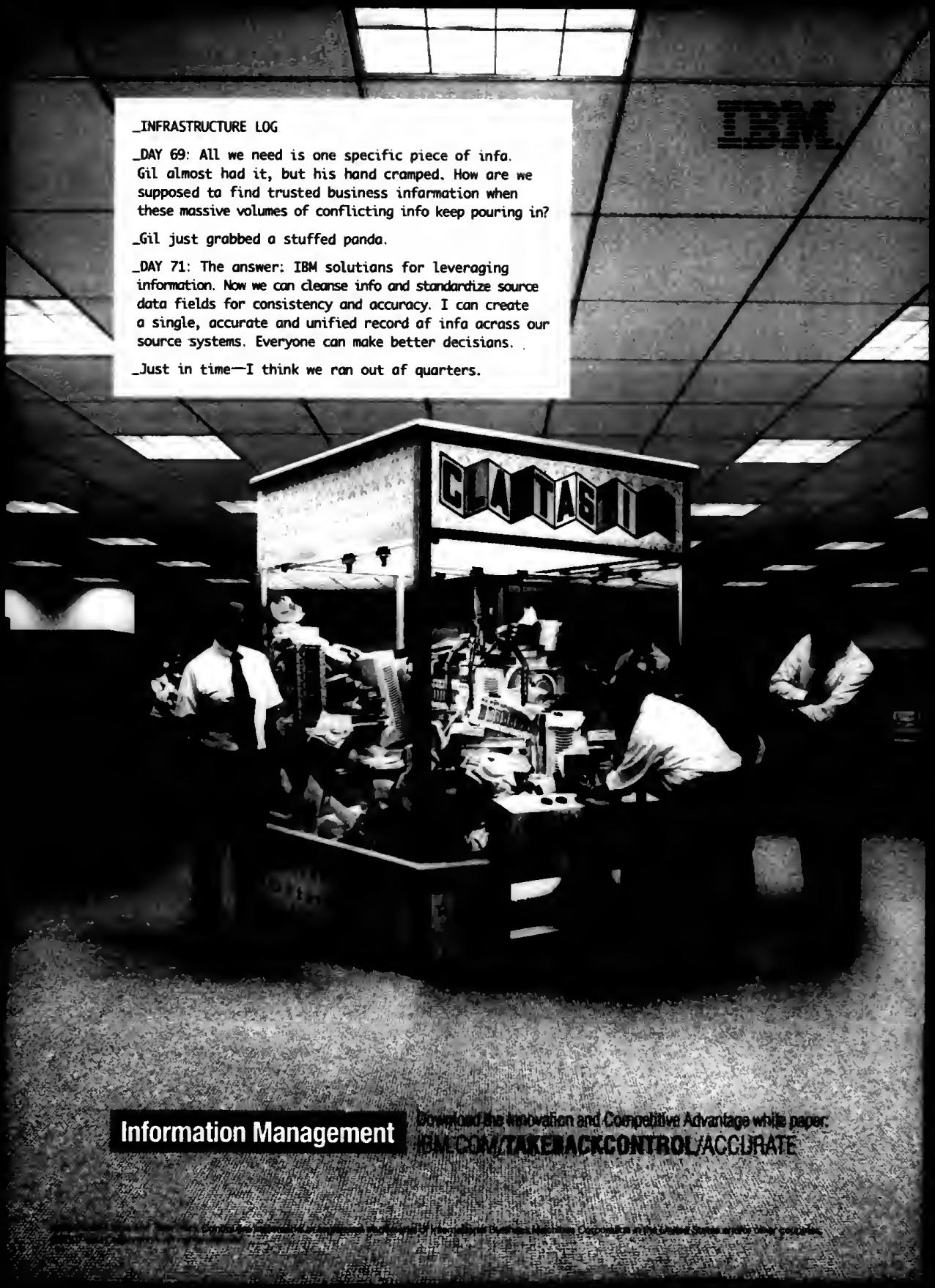
Afterward, attendees were invited to try out a concept of the Personal Digital Butler, but the two times I tried to activate it, SL lagged, my avatar froze in place, and I had to relaunch SL. I was told later that the many participants activating the demo simultaneously caused the lags.

In all, the Cisco event sparked my interest in the SL virtual meeting format, but my attention was focused more on making things work smoothly than on the material presented. Come to think of it, though, RL press conferences present similar challenges: Reporters jam into tight, loud spaces and have to fight to hear over side conversations or to get the correct spelling of the presenter's name.

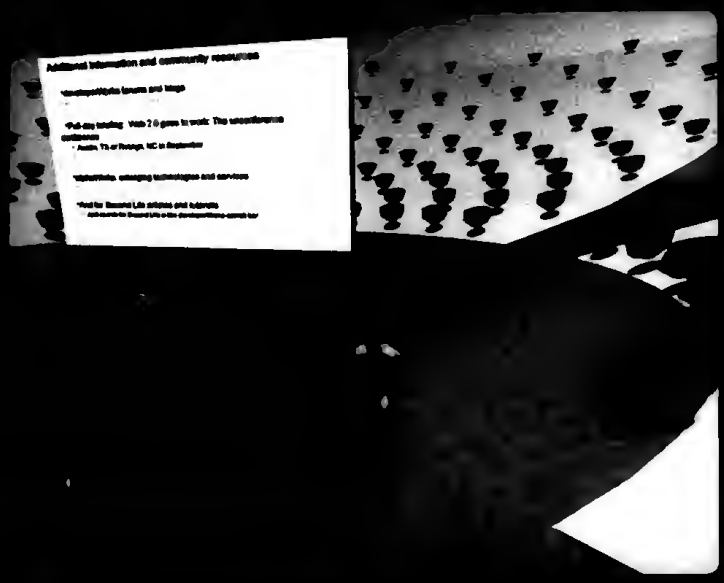
It ain't always easy getting at the truth, real or virtual.

– MATT HAMBLEN

Text chat during Cisco's virtual press conference featured frequent interruptions.


IBM
_INFRASTRUCTURE LOG
_DAY 69: All we need is one specific piece of info. Gil almost had it, but his hand cramped. How are we supposed to find trusted business information when these massive volumes of conflicting info keep pouring in?
_Gil just grabbed a stuffed panda.
_DAY 71: The answer: IBM solutions for leveraging information. Now we can cleanse info and standardize source data fields for consistency and accuracy. I can create a single, accurate and unified record of info across our source systems. Everyone can make better decisions.
_Just in time—I think we ran out of quarters.
Information Management
Download the Innovation and Competitive Advantage white paper:
IBM.COM/TAKEBACKCONTROL/ACCURATE

The Sears store in Second Life features crude images of Sears appliances.



Icon Silverspar finds himself alone with a whiteboard in IBM Theatre I

Continued from page 32

by IBM. To get an idea of how exciting this place is, imagine a 1950s-era IBMer in a starched white shirt and tie with a "Think" sign hanging on his wall.

I walked into a huge, round auditorium called IBM Theatre L The seats were all empty, and the stage was bare save for a big whiteboard with some semi-interesting techno-items written on it, each followed by an ordinary Web address. Problem was, the addresses were grayed out, and when I clicked on them, nothing happened. Advice to vendors: If you are going to play this game, make sure it works.

Silverspar chats with a well-dressed wolf

Undaunted, I made my way to a Sears store, where I found crude images of Sears appliances. It was possible to click on them and go to Sears' regular Web site. Wow! And it was possible to get and save a "card" with appliance product specs written on it in plain text. Double wow!

I saw no other visitors at the IBM or Sears sites.

THURSDAY: DÉJÀ VU

While booting up, I remembered buying the pioneering PC game King's Quest for my daughter in 1987. It ran on DOS, and of course my PC had no mouse, so we had to navigate Sir Graham via tedious and clumsy taps on the four arrow keys. Now, 20 years later, SL is barely better. The images are still crude and flat, and the arrow keys are no easier to use.

There's a reason for that. There are usually tens of thousands of users on SL at any given time, and Linden's servers deliver a dynamic and unique view to each one (although some of it does come from the local client software and images). Rendering 3-D images realistically in real time is incredibly compute- and bandwidth-intensive, and Linden's servers perform these functions faster than we have a right to expect. Still, scenes download painfully slowly, often taking more than a minute on my PC, a high-end, dual-core model that has 3GB of memory and is attached to the Internet at 15Mbit/sec. I worried about the life of my disk, which made little I/O noises nonstop whenever I was logged on.

FRIDAY: LOOKING FOR COMMERCE

I returned to IBM's main island, determined to find an IBMer who could answer some questions. I didn't find such a person, but I had a long chat with a well-dressed wolf who said he was from FurNation. He said he was only there to use the public "sandbox," provided by IBM, to build things.

There are a number of such sandboxes in SL, where residents can go and unpack the bits and pieces in their "inventories" and then work to assemble them into useful objects such as

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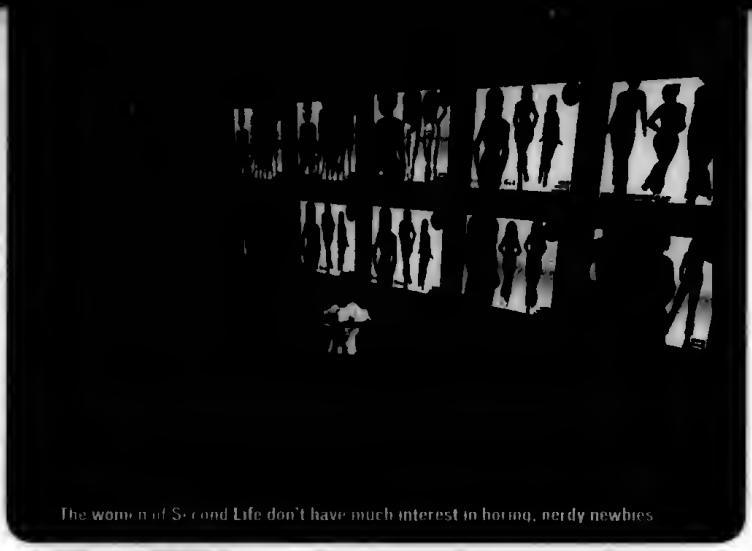
furniture, vehicles or fashion accessories. I told him I was trying to find out if companies in SL make any money. Virtual companies make real money, he said, "selling furry avatars, sexual bits, weapons and the like," while real companies like IBM only advertise and recruit. Apparently, the wolf was not applying for a job at IBM, but he was grateful to IBM for providing the sandbox. I asked if I might photograph him in front of it, but he refused.

Still fretting about bandwidth, I traveled next to the Cisco Virtual Campus and walked into the Cisco Training Center. A sign indicated that it was for use by only Cisco Systems partners and employees, which raises the question as to why it's on the public Internet and not on a Cisco intranet. In any case, I found neither partners nor employees in any of the training rooms, and no books, computers or training materials of any kind. Never had it seemed so reasonable to ask if there really was a there there.



The women of Second Life don't have much interest in boring, nerdy newbies

SATURDAY: LOOKING FOR ROMANCE

Sorry, I can't share all the details with you. Suffice it to say I found two choices. I could go to some more-or-less respectable place and approach some more-or-less respectable-looking women and chat them up. I did that.

Some just walked away, and some made polite small talk and then walked away. I think one problem was I had not taken the time to tweak my appearance, so I still looked like a boring, nerdy newbie — no tattoos, no jewelry, no big muscles, no flashy, body-defining clothes.

The other choice was to go to some raunchy place devoted to orgies and just join in. I didn't do that. OK, I went to some, but I didn't join in. That wouldn't have been "romance," would it?

SUNDAY: REFLECTION

To say I tried everything in Second Life would be almost as ludicrous as saying I have tried everything in my first life. Readers who are experienced SLers will complain that if I had only done this or tried that or joined such and such a group, I would have seen the magic in this virtual world, which, after all, has attracted 10 million registered users.

Perhaps. But I can only report the disappointments as I — a real person making a short sojourn in a virtual world — encountered them. The user interface is slow, clunky and primitive, at least compared with what's available in the best computer games today. The graphics are flat and poorly nuanced, and image downloads would try the patience of Job.

Perhaps my biggest disappointment, since I write for corporate IT managers, is that the corporate presence in SL is tentative and rudimentary — in most ways inferior to the companies' regular Web sites. To be fair, most of these companies are experimenting, and their islands in SL are nascent works in progress.

■ Perhaps my biggest disappointment, since I write for corporate IT managers, is that the corporate presence in SL is so tentative and rudimentary, in most ways inferior to the companies' own Web sites.

But I will now reveal to these companies what they need to do, and they can then buy huge numbers of Linden dollars with the real dollars they will have saved by not using focus groups.

Each major company location in SL should be staffed by a real person, at least during business hours. If some friendly and attractive avatar at the Cisco center had approached me and said, "Yes, sir, how may I help you?" and then had given me useful answers to my typed-in questions about training, employment opportunities or products, I would have fallen out of my chair with amazement and delight.

Yes, I know that would cost serious bucks. One or more real people would have to be paid real dollars to do that. But if a company can't make its virtual experience substantially better — and I mean really head-and-shoulders better — than its existing Web capabilities, it might as well not bother. My wolf friend isn't going to buy an IBM computer just because he spotted one through the window while playing in the IBM sandbox.

Each corporate island has to be a destination deliberately sought out by people with an interest in that company, with the knowledge that they will have a really cool virtual experience there while being treated like a real human by a real human.

So, will I return to SL? I probably will one day. But first I have to knock out that Windows/Linux story. ■

WHAT'S IS

OAKY, I SHARE YOUR PAIN.

I've been a Second Liler for a year. I've had many of the same problems, experienced some of the same fears and have repeatedly slammed the relentless hype about the virtual world and the activities there.

But here's the thing: Despite the terrible user interface, the presence of strange avatars, questionable marketing campaigns, bizarre monuments to artistic vision and the myriad other issues that have vexed people and companies trying to use Second Life, we have only just scratched the surface of this virtual world's potential. Put aside the problems and the hype for a moment, and consider some of the obvious strengths:

- The ability to simulate real-life objects in three dimensions.
- The ability of users to build 3-D models based on "blue sky" concepts, ranging from "sandbox" experiments to giant building or product simulations ("sims") that let companies test their ideas without having to make major real-world investments in land, equipment and human resources.
- Structured activities in 3-D spaces, such as orientation islands and tours of museum sims.
- A shared, real-time space that can host widely distributed groups of people.
- Interpersonal communication that incorporates body language and visual cues.
- A safe space that protects the privacy of users while letting them project real or ideal identities.

Many individuals and organizations place great value on technologies that provide these features. Three-dimensional modeling is a crucial tool for the architecture, aeronautics and automotive industries. The military has used 3-D simulators to train tank crews since the 1960s and now uses America's Army, a 3-D game based on teamwork and mission-specific goals, for training and recruiting purposes. Conference calls, webconferencing and even videoconferences are firmly ingrained into corporate culture. It's not a stretch to imagine these activities expanding into Second Life or other virtual worlds, where new modes of cooperation and creativity can be realized.

The experimentation has already begun. Clearly, many of the experiments have failed, but there are some success stories. A few entrepreneurs have established moneymaking businesses in Second Life. Others have built wonderful buildings and simulations, and some larger organizations have reported successful training and customer engagement efforts.

Take Harvard University, which has offered for-credit classes in Second Life for more than a year. Instructor Rebecca Nesson told me that virtual worlds, when compared with earlier distance-education technologies, are a "giant leap forward" in their ability to foster communication, class participation and certain types of simulated activities. More than 100 other schools and universities have also held classes or sessions in Second Life, and a few professors have even used gaming platforms – EverQuest, World of Warcraft and the like – to teach teamwork and management skills.

What can we expect in the years to come? Certainly, we will see more failures and cringe-inducing experiments. But I expect the complaints about the Second Life client and connectivity problems to drop away as developers improve the building tools, infrastructure and user interface. In addition, more people are going to try out virtual worlds and decide they want to stay. That's not only because more game- and social-networking-savvy Generation Yers are registering, but also because virtual world graphics will get really, really good, thanks to exponential advances in hardware and software technologies.

Forget the blocky shapes and blurry textures that now dominate Second Life; the virtual worlds of 2012 will look even better than the high-definition 3-D gaming environments currently offered by PlayStation 3 and Xbox 360. The virtual worlds of 2017 will be photorealistic, and the simulations will be fantastic.

Eventually, new tools, business models and enabling technologies will emerge within these worlds that are more efficient than processes in real life or the text-based Internet.

It may seem like a stretch to imagine these things now, but if we have learned anything from observing the evolution of software, hardware and networking over the past few decades, it is that mainstream applications of these technologies are seldom apparent early on. Virtual worlds are still in technological toddlerhood, but they will reach a level of mainstream maturity in the next five to 10 years.

– IAN LAMONT

Ian Lamont, whose avatar is shown here, foresees mainstream use of virtual worlds.

New Flexible Computing Solutions:

Centralized Control of Data Security and Image Management

Businesses today are faced with more complex challenges than ever before. Managing and supporting a more distributed workforce has introduced increased concern around data security, compliance and disaster recovery. Costs seem to continually rise while budgets seem to keep shrinking, driving the need to optimize IT resources in every way possible without compromising end-user or business productivity.

Organizations from large enterprises to small school districts have begun to address these challenges with innovative solutions that include alternative or new forms of computing. Many alternative computing options can help address business challenges by centralizing IT data control and image management, allowing for tight data security, easy image management and easily met regulatory compliance.

Although some alternative computing models, like thin computing, have been around for a while, not all have been completely successful in delivering true benefits. This may be partially due to the fact that the benefit is somewhat imbalanced – focused more on IT control than on end-user experience, or due to the fact that implementing an alternative computing infrastructure can be completely daunting, not to mention difficult.

Organizations must perform a comprehensive assessment of their existing infrastructure, which can be costly and time-consuming. Only then can they determine which components in their infrastructure must be changed or deployed. Deployment often requires piecing together components from multiple vendors. Many organizations are naturally overloaded by managing a wide array of hardware and software components, as well as the complexity of working with multiple vendors and dozens of contracts for service and support.

Flexible Computing is the Answer

Developed around unique customer needs, Dell's Flexible Computing Solution, On-Demand Desktop Streaming, addresses these customer challenges, without creating new ones for IT. On-Demand Desktop Streaming is an integrated end-to-end solution that can help streamline an organization's computing environment.

Dell helps simplify IT with tailored solutions and a single source for all computing needs, including hardware, software and expert guidance for assessing, designing and deploying the Dell computing infrastructures. With Dell pulling it all together, organizations can experience reliability, given that the client, server, network and software have all been tested together and validated by Dell. And Dell's uniquely balanced approach helps provide IT administrators with the centralized control they desire without compromising business productivity or the end user experience.

Today, Dell's initial Flexible Computing Solution, On-Demand Desktop Streaming, supports consolidated computing for LAN-based users. Eventually, Flexible Computing will evolve to support and accommodate users on any device, anywhere they might be.

Dell makes moving to a new and more centralized computing model less daunting and easier to manage for organizations of all types – from large enterprises to schools, healthcare and government agencies.

Several Components – One Source

Dell's On-Demand Desktop Streaming provides IT centralized control of data and image management for LAN-based users via operating system, application and virtual disk streaming. On-Demand Desktop Streaming utilizes diskless PCs in conjunction with

Dell Flexible Computing Solution:

- Storage: Dell PowerEdge 2900 NAS
- Clients: Diskless Dell OptiPlex 745 or Dell OptiPlex 755*
- Servers: Dell PowerEdge 2950 Server
- Networking/Switch: Dell PowerConnect Gigabit Switch
- Software: Citrix® Provisioning Server for Desktops
- Services: Dell Professional Assessment, Design and Deployment
- Support: Single Point of Contact, via single toll-free number, for Complete Solution Support

server-based software. A complete disk image is streamed to the PC, so users perform their typical operations while all data is securely written to the server storage location instead of on their local hard drive.

The solution is comprised of several key IT infrastructure components: Dell's PowerEdge™ 2950 server and diskless OptiPlex™ 745 and OptiPlex™ 755* desktops, Dell's PowerEdge™ 2900 NAS for additional storage, PowerConnect™ Gigabit switch, Citrix Desktop Server software and Dell Assessment, Design and Deployment Services – all provided through one source.

Broadcom, a global leader in semiconductors for wired and wireless communications, increases network bandwidth and helps to provide secure and reliable connectivity for Dell's Ethernet-based On-Demand Desktop Streaming Solution. As an industry Ethernet leader, Broadcom provides state-of-the-art networking solutions for Dell servers, desktops and notebooks. Broadcom's NetXtreme® and NetXtreme II Gigabit Ethernet solutions help simplify network management and are designed to increase flexibility, optimize server efficiency and improve application performance.

The solution's adaptable and flexible architecture meets the needs of various users and provides an optimal end-user experience, since CPU and graphics processing remain on the client. Image management and software updating can become more streamlined, leading to easier overall image deployment and management.

"If you're trying to standardize your IT infrastructure, Dell can facilitate it across the board in a way that I don't think any other company can match," according to Lee Steinsdoerfer, technology director, Zion-Benton Township High School, which deployed the Flexible Computing Solution. "When you put the whole package together, Dell is very hard to beat." (See *Standardized IT Infrastructure Solution Increases Productivity, Simplifies Image Management*) ✧

For more information on Dell Flexible Computing Solutions, please visit www.dell.com/flexcomputing

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Standardized IT Infrastructure Solution Increases Productivity, Simplifies Image Management

While not a large enterprise, Zion-Benton Township High School, located on Lake Michigan near Chicago, counts on technology in its business productivity lab, library and administrative office to help educate its 2,600 students.

Facing the same challenges as any business, updating the high school's standard software image had become labor-intensive and time-consuming. The school's heterogeneous IT infrastructure had also become difficult to manage, limiting its ability to adopt new applications and taking time away from other IT tasks.

"We were using many different suppliers of desktops and servers. Staying current on all those systems took a lot of our time," says Lee Steinsdoerfer, technology director at Zion-Benton. "If we standardized on a smaller number of vendors, our training needs would be reduced and our IT staff would be more productive. That would reduce overall costs."

To provide a consistent user experience, help increase efficiency and improve manageability, the district decided to standardize on a single vendor and streamline the client PC imaging process. "Standardizing on Dell has enabled us to do that, Steinsdoerfer says. "And from the perspective of ongoing maintenance, we now have a single point of contact where we can get answers fast."

Zion-Benton Township High School deployed Dell's Flexible Computing Solution for On-Demand Desktop Streaming to simplify image management. It also deployed Dell OptiPlex™ desktop computers, with 85 percent utilized as On-Demand Desktop Streaming clients. Dell PowerEdge™ servers host the Citrix Desktop Streaming software. Dell PowerConnect™ switches link the servers to the clients.

At Zion-Benton, the biggest IT productivity boost has come from eliminating the need to manually image desktop PCs. "What used to take five weeks, now takes just one day," Steinsdoerfer reports.

By automatically refreshing the client images for each new school year with Dell's Desktop Streaming Solution, Zion-Benton now saves approximately five weeks of work. IT can respond more quickly to teacher requests for new applications and updates throughout the year, and students and teachers receive a consistent user experience no matter which computer they use. The infrastructure is less time-consuming to manage, freeing IT staff to focus on more strategic tasks.

PHOTO COURTESY OF VARIAN MEDICAL SYSTEMS

« The SmartBeam IMRT targets cancer tumors while better protecting healthy tissue.

Targeting Cancer

Software that precisely shapes radiation beams to attack tumors helps deliver more effective treatment. By Mary K. Pratt

BACK IN the late 1980s, researchers at Varian Medical Systems Inc. had a vision for how to make radiation therapy for treating cancer more powerful, more efficient and much safer.

They just didn't have the technology they needed to get there.

"We didn't have the software that could do it, but the power of the computer was becoming sufficient that it could happen," says Dick Levy, chairman of Varian's board and former CEO of the company.

Varian leveraged the rapid pace of computing advancements of the 1990s to develop a more precise and effective way of delivering radiation therapy. The result is its product, SmartBeam Intensity Modulated Radiation Therapy (IMRT), a combination of hardware and software that pushed radiation therapy into a whole new realm of capabilities.

"The old radiation treatment compared to the new is like comparing a flashlight to a laser beam," Levy says.

SmartBeam IMRT enables oncology teams to precisely target cancer tumors while better protecting the surrounding healthy tissue, improving both quality of life for patients and clinical outcomes. SmartBeam IMRT earned Varian the top spot in the manufacturing category of the 2007 *Computerworld* Honors Program.

"IMRT was a revolution in the whole field, and Varian was instrumental in making this a reality for the user," says Arno J. Mundt, professor and chairman of the radiation oncology department at Moores Cancer Center, a part of the University of California, San Diego, Medical Center.

PINPOINTING A TUMOR

Levy's flashlight/laser beam analogy isn't an exaggeration. Radiation therapy has been around since the 1940s, and it has without question saved countless lives, but earlier versions had limits. Conventional delivery methods can't configure the radiation beams to tumors, a design flaw that often results in damage to surrounding healthy tissue and organs. Nor can it adjust the dose delivered by each beamlet to target areas requiring more radiation.

"The whole point is to put as much dose on the tumor and the least amount on the healthy tissue that surrounds it. The biggest problem is making it conform to the tumor," says Varian CEO Tim Guertin, who was president of the company's oncology systems business when SmartBeam IMRT was made ready for the commercial market.

Traditional linear accelerators deliver radiation beams that create a

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rectangular shape. Therapists osed lead blocks in an effort to shape the beams so the radiation woold conform to a tomor's shape, explains Stan Mansfield, Varian's manager of emerging technologies and IT. It was a combersome process.

Then, in the late 1980s, Varian delivered its moltileaf collimator, or MLC, a device that allows individoal motorized leaves to move in and oot of the beam's path during treatment to modulate the beam's intensity, thereby enabling the radiation therapy to conform more closely to the targeted site, according to Mansfield.

"And we thooght; 'What if we coold do that in real time and do that in conjonction with changing doses?' We thought we could do something new," he adds.

At the same time, medical facilities in Japan were using MLC in a conformal arc that rotated around patients, giving a three-dimensional dose of radiation therapy to the tomor rather than delivering it from just two directions (front and back).

Boilding on the model used in Japan, Varian delivered an IMRT prototype to clinicians at Memorial Sloan-Kettering Cancer Center in New York in 1995. The company introdoced its commercial SmartBeam IMRT in 1999, and it qoickly saw demand spike. It had 40 orders in 2000, and today more than 1,000 devices are in ose aroond the world.

"It's both an evolotion in technology and a revolotion in terms of treatment methodology," Mansfield says.

Mansfield says the real power of IMRT comes from the fact that clinicians now have the ability to deliver radiation therapy osing something called inverse planning, whereby they decide what dose is needed at what area and use the machine to make the calculations by running through thousands of algorithms.

"It's jost not something a homan could do [so quickly]. It woold take you weeks or months," Mondt says.

In addition, Varian's Aria oncology information system was designed to optimize data management for clinics

AT A GLANCE

Varian Medical Systems Inc.

Palo Alto, Calif.
www.varian.com

- Makes equipment, accessories and software for treating cancer and other medical conditions. It has 4,400 employees worldwide, and its total annual revenue fór fiscal 2006 was $1.6 billion.
- SmartBeam IMRT backers include Dick Levy, chairman of the board of directors and former CEO, and current CEO Tim Guertin, who was president of the oncology systems business from 1990 to 2005.
- About 25 software marketing personnel, 200 software engineers and 150 software service engineers work in Varian's oncology systems business worldwide. The company's IT organization consists of another 135 workers.

Continued from page 42

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using SmartBeam IMRT. This oncology-specific electronic medical record allows clinicians to immediately access administrative, clinical and financial information, thereby linking medical and radiation oncology data in one system with elements of the IMRT treatment process.

NEW TREATMENT CAPABILITIES

While research and development teams worked with clinicians to form a vision for SmartBeam IMRT, Levy recognized that Varian needed to change from a hardware company to a software firm if it was to succeed.

"Most of the evolutionary steps up to then were hardware improvements, but by 1988, it was clear that the future was going to be in software," says Levy, who was head of the company's medical business at the time.

Levy says Varian took an incremental approach to development, which helped the teams learn as they went, advancing the company's products as it hired more technologists and as its R&D team harnessed more technologies to deliver what the medical community needed.

> The whole secret of success in today's environment is not giving a better treatment, but giving a better treatment faster and more routinely and more safely.

"This was the perfect way of developing a product. We found strengths and weaknesses of the product, addressed them and then moved on," Levy says.

Varian hired technologists skilled in embedded controls, user interfaces and treatment planning, as well as experts in database technologies, Mansfield says. "We were building up those areas as we were figuring out how to adopt these technologies to solve the clinical problems," he explains.

With such expertise in place, Varian followed up its SmartBeam IMRT with On-Board Imager for IGRT (Image-Guided Radiotherapy), which allows clinicians to image and treat patients on a single machine that rotates around subjects to take X-rays and to deliver treatments from virtually any angle.

The On-Board Imager, which hit the market in 2004, produces high-resolution images of tumors and tracks changes in a tumor's shape, size and position. That capability, when coupled with SmartBeam IMRT, allows clinicians to be even more precise when targeting tumors.

Levy predicts more innovation in the years ahead. And, he says, as with the recent advancements in medical devices, future progress will involve optimizing IT applications.

"The whole secret of success in today's environment is not giving a better treatment," he says, "but giving a better treatment faster and more routinely and more safely." ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

A Hard Choice At a Tough Time

With **budgets cut** to the bone, it's a matter of deciding which is **more important** — IT services or information security.

Trouble Ticket

AT ISSUE: An 8% budget cut means something has to go.

ACTION PLAN: Cut back on IT services, because a data breach in the wake of security cuts would be worse.

HERE'S A hypothetical situation to ponder. Say you're in charge of both IT operations and information security. Big budget cuts are announced. You can't afford to maintain the status quo. Worse, you don't have the staff you used to, because a senior administrator just resigned and now there's a hiring freeze. Where do you cut back?

Hypothetical situations are fun, aren't they? Unfortunately, the scenario I just laid out is anything but hypothetical for me. It's happening right now.

Things started to look bad for the state agency I work at when our governor announced a 5% budget cut. They looked worse when he raised that to 8%. That kind of sweeping cutback usually leads to attrition. As people leave, your smaller budget starts to look better, but losing senior staffers does not help confidentiality, integrity and availability, the triad of the security profession.

I find myself torn between two strong impulses. On one hand, I am first and foremost a security professional. The protection of the agency's confidential data is a charge I take very seriously. If there were a data breach on my watch, I would feel that I had been derelict in my primary duty. Lawsuits might follow on the heels of a wave of bad publicity.

On the other hand, I have a strong customer-service bent. What's more, our customers are the state's taxpayers, and I feel obligated to ensure that their money is put to good use. And the taxpayers who most benefit from the services of this agency are the poor and the elderly. How can I, in good conscience, do anything that would compromise their well-being? If cuts in IT services led to a massive e-mail failure and some unfortunate soul suffered because a case worker missed some important information, I would feel devastated.

■ It's easier to tell the governor why we have a lousy help desk than to explain a breach.

In the end, I decided to cut IT services. That won't be popular among end users. But the security of confidential information is a public obligation that is more important than providing immediate IT services. I can't say that I'm happy with my decision; there really was no choice that would have made me happy. But if my choice is between explaining to the governor why our help desk is lousy or explaining why some confidential health information was compromised, I have to go with the lousy help desk.

VIOLENT URGES

Still, I am frustrated on several fronts. I feel an urge to bang some heads together, starting with the governor's and whoever in this agency's administration (or perhaps it was higher up in the food chain) decided not to recommend that we be allowed to hire a replacement for the departed senior administrator. And once I've banged those heads enough for some sense to enter them, I want to tell them, "Here's a list of people I've seen who are dead weight. Let's get rid of them and give more to the valuable employees who do the good, honest work that needs to be done."

Not that I'd ever give in to that urge. Still, I've been working in government long enough to have seen plenty of employees who don't really accomplish a thing in the course of a day. They write e-mails, wait for a response, sit on their hands, shift the blame for their inaction, get a cup of coffee and write another e-mail. Anywhere else, they would be fired for incompetence.

Oh well, I suppose it has always been this way in government. And I certainly don't have the political savvy required to actually change any of it.

My boss is far more politically astute than I am. He agrees that cutting IT services is the way to go. His take is that if the organization feels the pain of service cutbacks, priorities will change. Maybe I'm getting the hang of this political stuff after all. ■

JOIN IN
To join the discussion about security, go to computerworld.com/blogs/security.

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com.

THOUGHTS ON THE EVOLUTION
OF THE DATA CENTER

Should I design my data center around *my* data, or their network? That's easy.

INTRODUCING THE BROCADE DCX

BROCADE

Don't Make Me Pull Over!

How to improve your project processes without inflicting pain.

By Thomas Cutting

BACK IN the days before minivans and huge SUVs, road trips were painful. Our summers always included a 10-hour trip to visit our grandparents in New Hampshire. At the peak, there were eight of us: Mom, Dad, Mike, Karlyn, Richard, Chandler, Andy and me. Forget the comforts of DVD players, iPods and video games; our car didn't even have air conditioning.

We didn't bother much with seat belts, either. If it was the station wagon, Andy and I would stretch out in the way back. In the Ford Fairmont, I remember sleeping in the back window while cruising the interstate.

Today, there are laws against such things. Our parents would have been locked up, and we would have been sent into foster care. "How in the world did we survive without laws governing our car trips?" we ask each other sarcastically.

Working in the program management office (PMO), I get the same question from project managers with each new process. You can see it in their eyes: "Why do we need a procedure for that? I've been successfully doing this for the past 10 years!"

To ease the transition to new processes for members of your IT staff, try using these guidelines to SHIFT 'EM in the right direction.

Start where you are. Don't assume that you're starting from scratch. Determine where the organization is before making drastic changes. Chances are, something was attempted in the past that can serve as a solid basis for change. Also, if you ignore the previous effort, you will immediately alienate the people who worked on it. If you use it, you'll engage them.

Harvest from the team. Somehow, projects are being completed without a defined process. Gather what is working and document it. This builds buy-in more quickly and decreases the effort needed for development and training.

Improve what you have. Project managers bring ideas and templates from previous lives. I call these WICFs, from the phrase, "Where I came from . . . this is what we used." Take these tried and trusted methods, and fuse together different pieces to make the new one better.

Fill in the gaps. The resulting process will have holes that must be filled. There are two approaches. The first is to create a team of actual users of the process and serve as a facilitator as they complete it. The second is to create a "straw man" and let users tear it apart. The second method is usually faster initially, but it may take longer to gain buy-in.

Take feedback. Get people to pilot the process, and get their feedback. At one client, upper management forced us to make drastic changes to existing processes. When the pilot group saw the modifications, they soundly rejected them. Ouch! It takes tough skin to receive that kind of feedback. Remember that the objective is to make things right, not win a fight.

Enable ownership. Ultimately, the processes belong to those who use them, not to the PMO. From the very beginning, aim your development, training and communication toward instilling a sense of ownership. You are there to document and maintain the results. Establish a way to request changes and keep the processes relevant.

Make it work or throw it out. During audits, you may discover broken or obsolete processes. Pieces that are out of whack with reality need to be adjusted or just dumped. Doing so builds strong credibility for the PMO.

One last point: Without the support of upper management, you will fail. You may develop a stellar-looking set of processes, but you won't be able to enforce them. On our road trips, Dad was our upper management and the ultimate enforcer. I can still recall his voice after five hours packed in the car. By that time, we'd be fighting horrendously. He would turn his head, causing the car to swerve dangerously, and yell, "Don't make me pull over!" — something no one wanted to happen. ■

Cutting *is a project management professional and a member of the program management office at Mercury Insurance in California. Contact him at TCutting@MercuryInsurance.com.*

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■ OPINION

Paul Glen

Professional Excursions

NO MATTER how much you love your job, there comes a time when you need to take a break. I'm not talking about an afternoon lunch involving a martini; I'm talking about an extended engagement with something new. I call these breaks professional excursions — side trips in your career that don't necessarily lead anywhere but are important just the same. They can take weeks or months, but not just a few days. University professors get sabbaticals. I think that all knowledge workers need them, but we need to arrange our own.

Every few years, I try to take one. This summer, I took two. One involved earning my pilot's license. And since I give a lot of presentations at conferences and departmental meetings, I decided to give my funny bone a workout. So I took a stand-up comedy class that required the students to perform a five-minute set at the Hollywood Improv. (If you're curious, you can watch it on YouTube.)

These may seem like silly and frivolous endeavors, but professional excursions are important for a few reasons.

1. Excursions renew focus and vigor. No matter how much you love your job, you'll eventually get worn out. Vacations are supposed to help with this too. It's good to get away from the routine and think about something else. But an excursion is a lot more than a break. Riding the Matterhorn at Disneyland may be an excursion, but not a professional one.

2. Excursions introduce new knowledge, ideas and thinking modes. After spending years immersed in a specialized area of IT and probably a narrow range of business functions, people absorb the ideas and culture of their surroundings. At some point, you may not even realize it anymore. To really understand your environment, you need to view it from a different perspective. If you want to grow in your current job, you need to take in some new ideas and approaches to problems. Excursions offer the opportunity to absorb different ideas and thinking modes and to bring them back to your old job. These new and creative ways of understanding things can help break career logjams.

■ Trust me: The terror of a looming performance at the Hollywood Improv focuses the mind on joke writing.

Both of my excursions offered this. I've always been relatively funny, but learning how comedians structure jokes was quite interesting. And the range of knowledge required to get a pilot's license was surprisingly broad.

The different approaches to reasoning in these disparate fields was illuminating. I'm still figuring out how to incorporate all this learning into my consulting, writing and presentations.

3. Excursions expose you to new people. More than just experiencing new things, you need to get out and meet new people. They will challenge your thinking and assumptions and build your network. An infusion of new blood into your social and professional circles is worth investing in.

GETTING OUT THERE

Excursions can happen at work. They can involve new roles, departments, technologies or business functions. As you can see from mine, they can also be outside work and seem completely irrelevant, but they may not be.

To make your excursions useful, make sure that you are actually working on something real — that there is some concrete deliverable that you are driving toward. Without concrete deliverables, it's easy to let an excursion become a detour. For me, both excursions had deliverables to keep me focused. In flying, I wanted a license, not just a joyride. And trust me: The terror of a looming performance at the Hollywood Improv focuses the mind on joke writing.

So go out and have a little fun. Specialization is good, but too much of a good thing is, well, too much of a good thing. ■

Paul Glen *is the founder of the GeekLeaders.com Web community and author of the award-winning book* Leading Geeks: How to Manage and Lead People Who Deliver Technology *(Jossey-Bass, 2003). Contact him at info@paulglen.com.*

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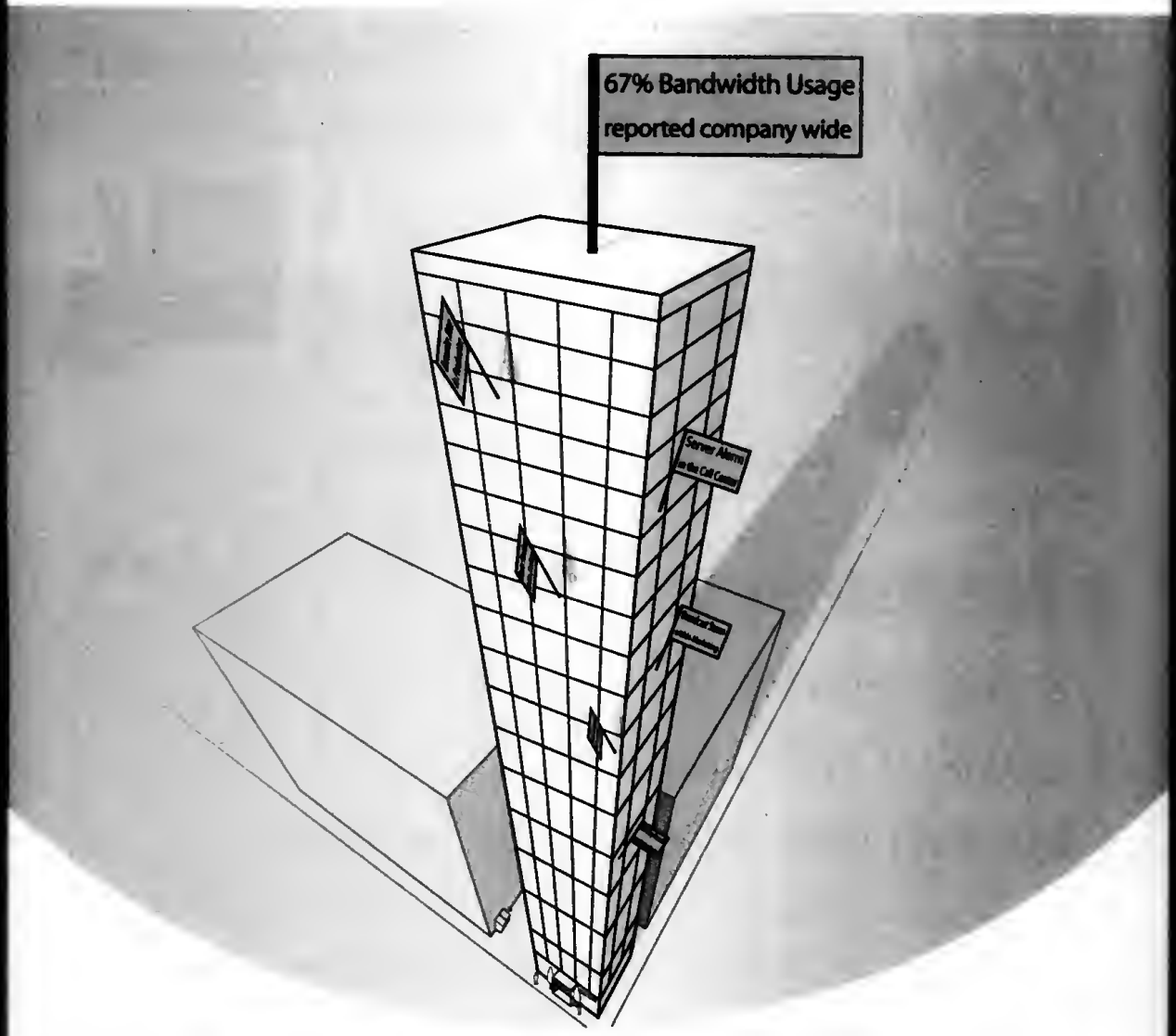

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Career Watch

WHERE THE JOBS WILL BE

Among computer-related occupations, programming jobs will see the flattest growth.

PROJECTED GROWTH, 2004-2014	
Network systems and data communications analysts	55%
Software engineers, applications	48%
Software engineers, systems software	43%
Network and systems administrators	38%
Database administrators	38%
Systems analysts	31%
Information scientists, research	26%
Support specialists	23%
Computer specialists, all other	19%
Programmers	2%

SOURCE: U.S. DEPARTMENT OF LABOR

Speaking the Language

FORRESTER RESEARCH INC. urges corporations to take action now to deal with "the pending legacy IT skills shortage." In a white paper of that name, the research firm reports that supply and demand are relatively balanced for Cobol programmers but much more imbalanced for C and Java (see chart).

But Forrester notes that those who possess Cobol skills are next in line for retirement, while programmers who came of age in the object-oriented era and specialized in languages such as C are about 25 years away from retirement. Learning Java programming seems far less likely to land you a job in years to come than picking up that old standby Cobol, even though Monster.com lists more openings for Java jobs than it does for jobs requiring Cobol skills. If Cobol seems too retro for you, the Monster data shows demand exceeding supply for .Net and C# specialists, but far fewer jobs are available. Don't even think about PL/1, though: Monster had no listings for that skill in the first quarter.

SKILL	RESUMES
Cobol	14,409
C	28 921
Java	82 456

SOURCE: FORRESTER RESEARCH INC., USING DATA FROM MONSTER.COM, JULY 2007

PAGE COMPILED BY JAMIE ECKLE

Business Meets Academia

» HOW U.S. COLLEGES AND UNIVERSITIES ARE WORKING WITH THE PRIVATE SECTOR TO DEVELOP TOMORROW'S IT LEADERS

SCHOOL: Florida State University College of Business, Tallahassee

DOES IT HAVE AN IT ADVISORY COUNCIL? Yes. The school's industry advisory council is made up of about a dozen mid- and senior-level IT managers from organizations such as Florida Power & Light Co. and Office Depot Inc.

IT EXECUTIVE FEEDBACK THAT HAS HELPED AMEND THE CURRICULUM: Members of the industry advisory council played a key role in transforming Florida State's master's in MIS program from what had been a traditional classroom setting to an online course, beginning in the fall of 2006, says Dave Paradice, professor and chairman of the school's MIS department.

DEGREE PROGRAMS OFFERED: Bachelor's and master's degrees in MIS

NUMBER OF DEGREES AWARDED IN SPRING '07: 22 bachelor's degrees

"We've had a master's program since the mid-1990s, but the reality was that people weren't going to leave their jobs in Miami or Orlando for a year and a half to get their degree," says Paradice.

Things seemed promising at first, with class sizes of 25 to 30 students, but by 2005, those numbers had dwindled to about eight students, Paradice says.

The initial two-year online program drew 45 applications, and 17 were admitted, says Paradice. Those students will graduate next spring. Similar interest was generated for the class of 2009, he adds.

The online master's in MIS program seems to be attracting a higher class of students, so to speak. "There's such a difference. The students in the online program typically have 10 years of work experience and excellent test scores," says Paradice. "As someone teaching the classes, I can say there's a definite increase in the quality of students we're getting into the program."

Florida State's industry advisory council has provided other useful feedback to the College of Business, says Paradice. For instance, the school used to require undergraduate MIS students to take four courses in programming languages. But the council felt that was overkill, since most MIS majors tend to move quickly into project management positions, he says.

So the MIS department modified the curriculum, requiring MIS majors to take two programming classes and two electives, such as business courses.

Florida State's College of Business is also considering adding new courses next fall that would be aimed at helping its undergraduate MIS students gain a better understanding of the sales side of the technology business, says Paradice.

– THOMAS HOFFMAN

Career Watch

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Among computer-related occupations, programming jobs will see the fastest growth.

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Software engineers, applications	[illegible]
Software engineers, systems software	[illegible]
Network and systems administrators	[illegible]
Database administrators	[illegible]
Systems analysts	31%
Information scientists, research	30%
Support specialists	29%
Computer specialists, all other	19%
Programmers	2%

SOURCE: U.S. DEPARTMENT OF LABOR

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SKILL
Cobol
C
Java

SOURCE: FORRESTER RESEARCH INC., USING DATA FROM MONSTER.COM, JULY 2007

PAGE COMPILED BY JAMIE ECKLE.

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SharkTank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Never Mind

It's Sunday afternoon, and this net admin pilot fish gets a call at home from a database administrator who's at work doing server updates. "She's doing the updates using a remote console from her office in a building adjacent to the building where the servers are housed," says fish. "She complains that she was just kicked off the server and believes it's a network problem." DBA: "I'm applying important patches to the server, and it's important that I don't get disconnected again." Fish: If the patches are so important, why don't you go over to the computer room and apply them directly on the server? DBA: "Well, I'm almost done anyway."

One Sweet Fix

For over a year, this user calls the help desk at least three times a week, complaining about computer problems he's having. "He always used to say that because of the computer fault, he was going to miss lunch again to catch up on his work," says a pilot fish who regularly takes the calls. "After a year of this, I'd had enough. I sent a 50-cent chocolate bar down to him, with a note on it saying, 'This is for the next time the computer goes wrong.' Fortunately, he saw the funny side of it and became a firm supporter of IT for the next 15 years until he retired. As he was calmer using the computer, he also had fewer problems. If only all IT issues could be fixed with a 50-cent chocolate bar."

Aha!

Users signing up for this company's online applications submit a form with full name and mother's maiden name. Then IT sends an e-mail message telling the user his initial password is his mother's maiden name. But one user just can't sign on. "We try logging on using her mother's maiden name with no problem," says an IT pilot fish on the case. "We suggest opening a new browser window, rebooting the machine – all to no avail. Finally, we ask her to say aloud the letters as she types. When she gets to the password field, she starts, 'M-O-T-H-E-R . . .' "

Unreliable

Panicked secretary asks this pilot fish for help, and it's got to be unofficial: The secretary's brother is having a crisis, but he doesn't work for the company. "His Ph.D. thesis is on a floppy, and the floppy is corrupted," fish reports. "I asked, 'Isn't the thesis on a hard drive?' Apparently, her brother heard that hard drives can be unreliable, so he backed up his thesis onto a floppy. And only a floppy. A single floppy. For two years. Making changes nearly every day. And never once did he write it to the hard drive."

■ *Write to Sharky: sharky@computerworld.com. Send me your true tale of IT life, and you'll get a stylish Shark shirt if I use it.*

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Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement 1492193. CANADIAN POSTMASTER: Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly, except for a single combined issue the first two weeks of July and the last two weeks of December by Computerworld, Inc., 1 Speen Street, Box 9171, Framingham, Mass. 01701-9171.

■ FRANKLY SPEAKING

Frank Hayes

A Business Problem

SECURITY IS a people problem. OK, you already knew that. But last week, the SANS Institute finally recognized it too, in its list of the top 20 Internet security risks of 2007. Topping the chart of new, hard-to-defend-against risks were vulnerabilities in custom Web applications and (drum roll, please) "gullible, busy, accommodating computer users, including executives, IT staff and others with privileged access."

According to the SANS report, cybercrooks are still running their automated attack programs, looking for security holes in unpatched and misconfigured software (average time until an attack after a new system is attached to the Internet: five minutes).

But IT shops are now much better at blocking those attacks with technology. So attackers are getting more specific. They're launching tightly targeted phishing attacks against specific users as a way to get at corporate and personal information, including customer credit card data and individual online banking passwords.

In other words, they're not just going after vulnerable software. They're aggressively aiming at vulnerable people, too.

It's great news that SANS is publicly recognizing security as a people problem.

Not such great news is what SANS recommends we do about it. Option 1: Launch our own test attacks against users, and cut off Internet access for those who fail the test. Option 2: Dramatically beef up our monitoring and forensics systems, so we can constantly search for intrusions.

Those are classic security responses. The first one is wrongheaded, and both of them are naive.

What's wrong with staging our own phishing attacks? Nothing, really. But cutting off users who fail the test? That turns us into the enemy of our users. Instead of encouraging them to be vigilant against outside attackers, it will guarantee that IT gets zero trust, zero cooperation and zero help from users.

■ Security is a people problem, but that's not enough. We have to make the case that security is a business problem.

And that animosity won't stop with the security group. The IT people who take the brunt of it will be those on the help desk and development teams and anyone else who deals directly with users.

Worst of all, it won't work. How long will a top sales guy remain without Internet access after he fails the test? No time at all. When it's between business and security, the choice will go to business every time. There will be no consequences. And IT's great new security program will be a fiasco.

What about beefing up our monitoring and forensics? Sure, that's a great idea — it won't antagonize users and is certain to improve our chances against attackers. Just one question: How will we pay for expensive new security systems that generate no revenue and might not be needed?

Answer: We won't. We'll never get budget approval for a proposal so focused on security and — apparently — so naive about business reality.

Understanding that security is a people problem is important. But it's not enough — just as seeing security as a technology problem wasn't enough.

We have to take the next step and make the case for security as a business problem.

As long as security is seen as just a cost — or, worse, as the enemy of business — we'll never have CEO support for critical security initiatives.

We have to frame security as a business enabler, not a business crippler. We have to sell real benefits: safer customers, more reliable systems, executives whose bank accounts aren't emptied.

Then we can get the budgets for beefed-up monitoring. And the cooperation of business-side managers to keep employees in line.

And most of all, confidence from top-level management that we really are looking out for the business.

Security is a business problem. You know that. Now let's go to work on getting the rest of the business to recognize it too. ■

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